500 provides a command signal to the inverters **202/204** which drive the bulbs **102**. Light sensors **506** provide feedback to the controller **500** indicating the amount of generated light. The brightness level changes as the control knobs change. In addition, the brightness level could be controlled through software and this level could be adjusted as a function of time. The bulbs **102** decay and degrade over time, thus consuming more power to produce the same level of luminance from the bulbs. The controller **500** recognizes the decrease in bulb brightness, based on input from the brightness sensors **506**, and compensates for it, thus keeping the bulbs **102** brighter longer. This closed loop control can aid in maintaining the bulb output at a requisite level.

[**0054**] The I/O device **510** shown in **FIG. 5** can also allow the backlit LCD monitor to provide fault information to a central repository for analysis. **FIG. 9** shows an exemplary embodiment of a system **900** in which a number of backlit LCD monitors **902** are coupled to a network **904** through I/O device **510**. Such a connection may be made through a network interface such as an Ethernet card. The network may be a propriety network (e.g., extranet, intranet) or a public network (e.g., Internet). Also coupled to the network **904** is a server **906** and database **908**. The fault logs of all the backlit LCD monitors **902** can be retrieved periodically (e.g., daily) and stored in a database **908**. These logs can then be used to predict faults through fault prediction software and schedule service activities for the backlit LCD monitors. In addition the database **908** could include the serial number of the major components and the software version level being executed by the controller. Such a system is useful in application where the backlit LCD monitors **902** are located in disparate locations such as airport control towers.

[**0055**] Central storage of fault data in database **908** can also be used to detect manufacturing trends. For example, it may be determined that inverters on certain backlit LCD monitors fail more frequently. This information can be indexed to manufacturing date to detect if a manufacturing process is responsible for failures.

[**0056**] In addition, an individual backlit LCD monitor **902** can request service if a particular fault or series of faults are logged. Instead of waiting for the fault log to be retrieved by server **906**, the backlit LCD monitor **902** may initiate a service request over network **904** if certain conditions occur. For example, if five sequential fan failures are logged, the controller **500** may be programmed to request fan service by sending a service request through I/O device **510** to server **906**.

[**0057**] The invention is not limited to backlit LCD monitors but may be applied to a variety of devices in which performance parameters (such as heat, current, voltage) are monitored, faults logged, and predictive analysis used to schedule maintenance. The networked system of **FIG. 9** may be used for devices other than backlit LCD monitors.

[**0058**] The present invention includes both passive and active cooling techniques which can result in a more efficient backlit LCD monitor. The cooling technique of drawing filtered air across the bulbs reduces the interior temperature of the backlit LCD monitor and it allows the bulbs to operate at a higher current and/or in higher ambient conditions. Using the fans only when the temperature of the backlit LCD monitor reaches a pre-selected threshold extends the life of the fans and allows the backlit LCD monitor warm-up process to be more efficient. Bulb life can be extended by providing enough power to provide the selected brightness level and by increasing the current as the bulbs decay. Fewer outages can result from warning operators when temperature levels increase or bulb brightness decreases and by using predictive software and replacing components before the fail and render the monitor inoperable.

[**0059**] As described above, the present invention can be embodied in the form of computer-implemented processes and apparatuses for practicing those processes. The present invention can also be embodied in the form of computer program code containing instructions embodied in tangible media, such as floppy diskettes, CD-ROMs, hard drives, or any other computer-readable medium, wherein, when the computer program code is loaded into and executed by a computer, the computer becomes an apparatus for practicing the invention. The present invention can also be embodied in the form of computer program code, for example, whether stored in a storage medium, loaded into and/or executed by a computer or transmitted over some transmission medium, such as over electrical wiring or cabling, through fiber optics, or via electromagnetic radiation, wherein, when the computer program code is loaded into and executed by a computer, the computer becomes an apparatus for practicing the invention. When implemented on a general-purpose microprocessor, the computer program code segments configure the microprocessor to create specific logic circuits.

[**0060**] While the invention has been described with reference to exemplary embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the essential scope thereof. Therefore, it is intended that the invention not be limited to the particular embodiments disclosed for carrying out this invention.

1. A backlit liquid crystal display monitor comprising:

a backlight assembly having opposing top and bottom surfaces, said bottom surface including a plurality of fluorescent bulbs having parallel bulb axes, and two or more inverters to drive said bulbs;

a cooling assembly having opposing top and bottom surfaces, the top surface of said cooling assembly mounted on the bottom surface of said backlight assembly to form a closed air space around said bulbs, said cooling assembly including:

a light sensor on the top surface of said cooling assembly, said light sensor having a sensor axis that is perpendicular to the bulb axes of said fluorescent bulbs;

a temperature sensor;

a heat sink on the bottom surface of said cooling assembly; and

an air inlet and an air outlet in fluid communication with said closed air space and positioned for causing air to flow across said bulbs;